

# Baton Rouge Community College

## *Academic Affairs Master Syllabus*

Date Approved or Revised: July 24, 2008

**Course Name:** Chemistry II for Science Majors

**Course Number:** CHEM 102

**Lecture Hrs.** 3

**Lab Hrs.** 0

**Credit Hrs.** 3

**Course Description:** Introduces chemical theories and principles with emphasis on chemical equilibria, acids and bases, electrochemistry, chemical thermodynamics, and kinetics. Integrates problem-solving and quantitative approaches. Intended for students planning to major in science or engineering.

**Prerequisites:** CHEM 101 and CHEM 101L

**Co-requisites:** CHEM 102L

**Suggested Enrollment Cap:** 30

**Learning Outcomes:** Upon successful completion of this course, the student will be able to:

- Demonstrate a fundamental knowledge of chemistry concepts in the areas of characterizations and reactions of solids, liquids, gases, and solutions; thermochemical reactions and reaction kinetics, chemical equilibrium, and acids and bases;
- Analyze and solve fundamental quantitative chemistry problems that relate to course content;
- Apply chemical principles to understanding natural phenomena, technology, and materials encountered in everyday life;
- Critically assess current and emerging chemistry-related technologies that impact society; and
- Use standard English to effectively communicate chemical concepts on oral and written assignments.

**General Education Learning Outcomes:** This course supports the development of competency in the following areas. Students will:

- Think critically, collect evidence (statistics, examples, testimony) and make decisions based on the evidence, comprehend and analyze texts, and solve problems using methods of critical and scientific inquiry;
- Organize, analyze, and develop useful information useful by employing mathematical principles; and
- Relate the general concepts of science to the world and demonstrate an understanding of the impact of these processes and their concepts on human lives.

**Assessment Measures:** Instructors may use a variety of assessment measures to assess student performance. But, the following assessments will be used in all sections:

- Individual instructor-designed exams will collectively assess all of the learning outcomes and will be administered during the semester as listed in the course syllabus;
- An instructor and collaborative departmentally-designed comprehensive final exam, adhering to a department-determined content, will assess a portion of the learning outcomes and will be administered at the end of the semester; and
- Individual Instructor-designed or collaborative instructor-designed assignments will be given as a portion of the total grade and will include written and oral assignments, projects, homework, and quizzes; all assignments will be graded using an instructor-designed rubric.

### **Information to be included on the Instructors' Course Syllabi:**

- **Disability Statement:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.
- **Grading:** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor's and/or the department's policy for make-up work. For example in a speech course, "Speeches not given on due date will receive no grade higher than a sixty" or "Make-up work will not be accepted after the last day of class."
- **Attendance Policy:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.
- **General Policies:** Instructors' policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.
- **Cheating and Plagiarism:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.
- **Safety Concerns:** In some programs this may be a major issue. For example, "No student will be allowed in the safety lab without safety glasses." General statements such as, "Items that may be harmful to one's self or others should not be brought to class."
- **Library/ Learning Resources:** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

## **Expanded Course Outline:**

- I. States of Matter and Solutions
  - A. The Gaseous State
  - B. Liquids and Solids
  - C. Solutions and Colligative Properties
  
- II. Chemical Reactions and Equilibrium
  - A. Thermochemistry
  - B. Rates of Chemical Reactions
  - C. Chemical Equilibrium
  - D. Acids and Bases
  - E. Acid-Base Equilibria
  - F. Electrochemistry